

REMARKS

This communication is a full and timely response to the non-final Office Action dated August 27, 2004 (Paper No./Mail Date 8). By this communication, claims 1 and 3 have been canceled without prejudice, and the specification, abstract, and claims 2 and 4-9 have been amended.

Portions of the specification have been amended to address formal issues. In particular, at page 4, line 7 "o" was changed to "of" and at page 11, line 15 "he" was changed to "the." No new matter has been added.

The abstract has been amended to address formal issues. Support for the changes to the abstract can be found variously throughout the specification, for example, at page 8, lines 9-18; page 9, lines 6-25; and page 10, lines 1-11. No new matter has been added.

Claim 2 has been amended to recite a flexible substrate provided with a through-hole for light transmission; an imaging element having a light receiving portion, wherein said imaging element is flip chip mounted on a first side of the substrate such that the light receiving portion is exposed through the through-hole; and a lens unit mounted on a second side of the substrate to cover a space over the light receiving portion of the imaging element. Support for the changes to claim 2 can be found variously throughout the specification, for example, at page 7, lines 19-21; page 9, lines 7-25; and page 8, lines 19-23. No new matter has been added.

Claim 4 has been amended to recite the imaging element has the light receiving portion on a first side and a shielding layer on a second side opposite to the first side. Support for the changes to claim 4 can be found variously throughout the specification, for example, at page 9, lines 7-25 and page 10, lines 1-11. No new matter has been added.

Claim 5 has been amended to recite an imaging element having a light receiving portion on a first side, and a shielding layer on a second side that is opposite the first side, wherein said imaging element is flip chip mounted on the substrate such that said first side is opposed to the substrate. Support for the changes to claim 5 can be found variously throughout the specification, for example, at page 9, lines 7-25 and page 10, lines 1-11. No new matter has been added.

Claim 6 has been amended to recite an imaging element having a light receiving portion on a first surface, wherein said imaging element is flip chip mounted on one side of the substrate such

that the light receiving portion is exposed through the through-hole; and a shielding layer on a back surface of the imaging element, wherein said back surface is opposite to the first surface of the having the light receiving portion. Support for the changes to claim 6 can be found variously throughout the specification, for example, at page 9, lines 7-25 and page 10, lines 1-11. No new matter has been added.

Claim 7 has been amended to recite a black resin is applied to the periphery of the imaging element including a connecting portion located between the substrate and the imaging element by the flip chip mounting to cover the side surface and the back surface of the imaging element, and wherein a portion of the resin is the shielding layer. Support for the changes to claim 7 can be found variously throughout the specification, for example, at page 10, lines 12-22. No new matter has been added.

Claim 8 has been amended to recite an imaging element having a light receiving portion on a first surface of the imaging element and a shielding layer on a back surface of the imaging element, wherein said imaging element is flip chip mounted on a first side of the substrate such that the light receiving portion is exposed through the through-hole, and a lens unit mounted on a second side of the substrate. Support for the changes to claim 8 can be found variously throughout the specification, for example, at page 9, lines 7-25, and page 10, lines 1-11. No new matter has been added.

Claim 9 has been amended to recite an imaging element having a light receiving portion on a first surface of the imaging element and a shielding layer on a back surface of the imaging element, wherein said imaging element is flip chip mounted on a first side of the substrate such that the light receiving portion is exposed through the through-hole, and a lens unit is mounted on a second side of the substrate. Support for the changes to claim 8 can be found variously throughout the specification, for example, at page 9, lines 7-25, and page 10, lines 1-11. No new matter has been added.

Claims 2 and 4-9 are pending where claims 2, 5, 6, 8, and 9 are independent.

Objection to the Abstract

The Abstract was objected to for having improper language and format. Applicant disagrees. However, in an effort to expedite prosecution Applicant has provided a substitute

abstract that includes the proper language and format. Accordingly, Applicant respectfully requests that the objection to the abstract be withdrawn.

Objection to the Specification

The specification was objected to for alleged informalities. As discussed above, Applicant has amended the specification to these informalities. Accordingly, Applicant respectfully requests that the objection to the specification be withdrawn.

Objection to the Claims

Claims 5-9 were objected to for alleged informalities. As discussed above, Applicant has amended claims 5-9, in a manner that places the claims in proper form. Accordingly, Applicant respectfully requests that the objection to claims 5-9 be withdrawn.

Rejections Under 35 U.S.C. §102

Claims 1-3 were rejected under 35 U.S.C. 102(e) as anticipated by *Ueda*, U.S. Patent No. 6,122, 009. Applicant respectfully traverses this rejection.

Claims 1 and 3 have been canceled without prejudice. Accordingly, the rejection with respect to these claims is moot and should be withdrawn.

Claim 2 recites a camera system having a camera module comprising a flexible substrate provided with a through-hole for light transmission; an imaging element having a light receiving portion, wherein said imaging element is flip chip mounted on a first side of the substrate such that the light receiving portion is exposed through the through-hole; and a lens unit mounted on a second side of the substrate to cover a space over the light receiving portion of the imaging element.

The present invention is divided into camera module having an image sensor and a system module having system ICs or electric parts. Based on this construction, the imaging sensor is prevented from producing a thermal noise caused by the heat of other ICs. Moreover, The image element of the instant invention is connected to a flexible wiring board so that it is possible to freely change the orientation of the camera module utilizing the flexibility of the flexible wiring board, whereby when incorporating the camera module in an information terminal product, it is possible to

arbitrarily adjust the mounting angle of the camera module, thereby substantially enhancing the degree of freedom at the time of mounting.

Ueda discloses 2 an image pickup apparatus having a holder mounted to a substrate 1. A CCD bare chip is disposed on the substrate 1, and converts light formed by an image forming lens 4 into an image signal. The housing of the holder 2 is a package 2A that has a circular hole 3 that allows emitted light from an object to enter. The CCD bare chip 12 is mounted such data when the holder 2 is mounted on the substrate 1, the CCD bare chip 12 faces the hole 3. *Ueda* fails to disclose, teach, or suggest a flexible substrate and an imaging element as recited in claim 2.

In contrast, *Ueda* discloses a camera that has an image sensor and ICs that are mounted on the same substrate in the same package. Moreover, *Ueda* teaches the use of a substrate that is inflexible. Accordingly, claim 2 is not anticipated.

To properly anticipate a claim, the document must disclose, explicitly or implicitly, each and every feature recited in the claim. *See Verdegall Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Accordingly, Applicant respectfully requests that the rejection to claim 2 be withdrawn and this claim be allowed.

Claim 4 was rejected under 35 U.S.C. 102 as anticipated by *Sako et al.*, U.S. Patent No. 6,724,503. Applicant respectfully traverses this rejection.

Claim 4 has been amended to depend from claim 2. Therefore, Applicant submits that the rejection of claim 4 as anticipated by *Sako* is moot and should be withdrawn. Moreover, by virtue of its dependency from claim 2, Applicant submits that claim 4 is allowable for at least the same reasons given above with respect to claim 2. In addition, Applicant submits that claim 4 is further distinguished over *Ueda* by the additional elements recited therein, and particularly with respect to the claimed combination. Applicant respectfully requests, therefore, that the rejection of claim 4 under 35 U.S.C. §102 be withdrawn, and this claim be allowed.

Rejection Under 35 U.S.C. §103

Claims 5-9 were rejected under 35 U.S.C. §103(a) as unpatentable over *Ueda* in further view of *Sako*. Applicant respectfully traverses this rejection.

As acknowledged by the Office Action, *Ueda* qualifies as prior art under 35 U.S.C. §102(e). Applicant adds that Sony Corporation of Tokyo, Japan commonly owns both the instant application and *Ueda*. In other words, the subject matter which would otherwise be prior art to the claimed invention and the claimed invention were (and still are) entirely or wholly owned by Sony Corporation of Tokyo, Japan at the time the claimed invention was made. *See* MPEP §706.02(1)(2). Under 35 U.S.C. §103(c), subject matter developed by another person, which qualifies as prior art under §102(e), shall not preclude patentability where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. Because the provisions of §103(c) have been satisfied, Applicant submits that *Ueda* is disqualified as prior art. Moreover, because the Office Action acknowledged that *Sako* fails to disclose, teach, or suggest every element recited in claims 5-9, a *prima facie* case for obviousness has not been established. Accordingly, Applicant respectfully requests that the rejection of claims 5-9 under 35 U.S.C. §103 be withdrawn, and these claims be allowed.

Conclusion

Based on at least the foregoing amendments and remarks, Applicants submit that claims 2 and 4-9 are allowable, and this application is in condition for allowance. Accordingly, Applicants request favorable reexamination and reconsideration of the application. In the event the Examiner has any comments or suggestions for placing the application in even better form, Applicants request that the Examiner contact the undersigned attorney at the number listed below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-1894 from which the undersigned is authorized to draw.

Dated: November 23, 2004

Respectfully submitted,

By 

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Attachment: Substitute Abstract

ABSTRACT

The system and apparatus of the present invention are directed to a camera module in which an operational defect (generation of a ghost image) as a result of a reduction in thickness is eliminated. The camera module includes a substrate provided with a through-hole for light transmission, a light receiving portion provided on a first surface of an imaging element. The imaging element is flip chip mounted on a first side of the substrate such that the light receiving portion is exposed through the through-hole, and a shielding layer on a back surface of the imaging element wherein the back surface is opposite the first surface having the light receiving portion. A lens unit is mounted a second side of the substrate.